How to change engine thermostat on **BMW 3 Compact (E46)** – replacement guide

SIMILAR VIDEO TUTORIAL



This video shows the replacement procedure of a similar car part on another vehicle

Important!

This replacement procedure can be used for:
BMW 3 Compact (E46) 320td 2.0, BMW 3 Compact (E46) 318td 2.0

The steps may slightly vary depending on the car design.

This tutorial was created based on the replacement procedure for a similar car part on: BMW 3 Touring (E46) 320d 2.0

REPLACEMENT: ENGINE THERMOSTAT – BMW 3 COMPACT (E46). TOOLS YOU'LL NEED:



- All-purpose cleaning spray
- Sealant
- Torque wrench
- Combination spanner #13
- Drive socket # 7
- Drive socket # 10
- Drive socket # 12
- Drive socket # 13
- HEX bit No.H5
- Ratchet wrench
- Flat screwdriver
- Seal scraper
- Fluid container
- Funnel
- Crow bar
- Microfibre towel
- Fender cover
- Wheel chock

Buy tools

Replacement: engine thermostat – BMW 3 Compact (E46). AUTODOC recommends:

- Check the condition of the coolant every time you replace the thermostat. Change the coolant if necessary.
- Please note: all work on the car – BMW 3 Compact (E46) – should be done with the engine switched off.

CARRY OUT REPLACEMENT IN THE FOLLOWING ORDER:

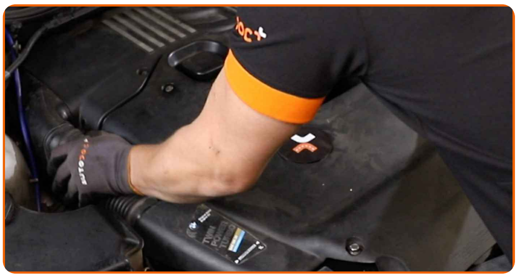
1 Open the bonnet.

2 Use a fender protection cover to prevent damaging paintwork and plastic parts of the car.

3 Unscrew the fasteners of the air distribution housing assembly. Use a drive socket #12. Use a ratchet wrench.



4 Remove the air distribution housing assembly.

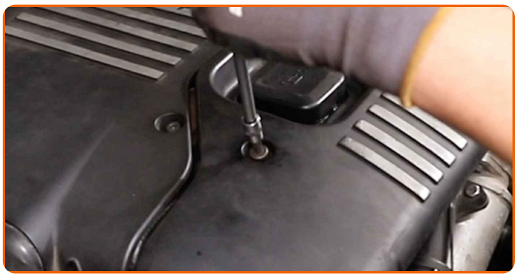


5 Secure the wheels with chocks.

6 Lift the car using a jack or place it over an inspection pit.



7 Unscrew the engine cover fastener. Use HEX No.H5. Use a ratchet wrench.



8 Remove the engine cover.



AUTODOC recommends:

- Do not apply excessive force when removing the part. Otherwise you may damage it.

9 Prepare a container for fluids.



10 Unscrew the coolant drain plug. Use a flat screwdriver.



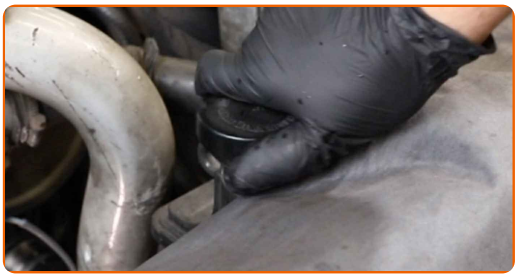
11 Drain the coolant from the engine.



Replacement: engine thermostat – BMW 3 Compact (E46). Tip from AUTODOC experts:

- Caution! The coolant can be very hot.
- Wear gloves to prevent contact with hot liquid.
- All work should be done with the engine stopped.
- Wait until the coolant has completely flowed out of the drain hole.

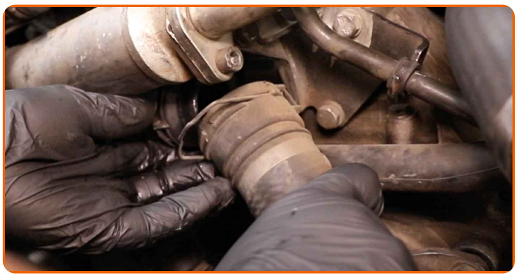
12 Unscrew the coolant reservoir cap.



13 Disconnect the coolant pipe retaining clip. Use a crowbar.



14 Detach the coolant hose. Use a crowbar.



Replacement: engine thermostat – BMW 3 Compact (E46). AUTODOC recommends:

- Be careful! The coolant may leak.

15 Screw in the coolant drain plug. Use a flat screwdriver.



16 Remove the fastening clamps of the air filter breather pipe and the air filter inlet pipe. Use a drive socket #7. Use a ratchet wrench.



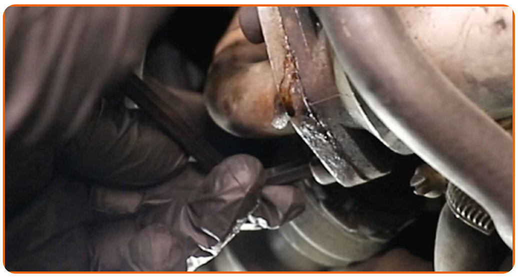
17 Remove the air intake hose.



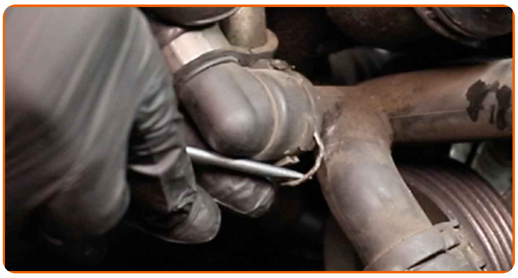
18 Cover the air intake hose with a microfibre towel to prevent dust and dirt from getting into the system.



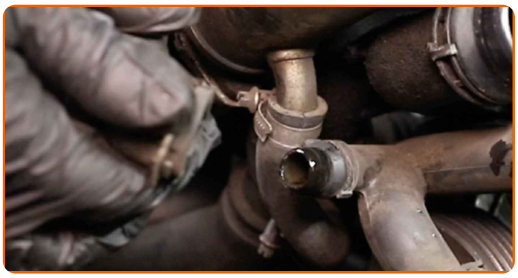
19 Unscrew the EGR cooler fasteners. Use HEX No.H5.



20 Disconnect the coolant pipe retaining clip. Use a crowbar.



21 Detach the coolant hose.



Replacement: engine thermostat – BMW 3 Compact (E46). Tip from AUTODOC experts:

- Be careful! The coolant may leak.

22 Loosen the coolant hose clamp. Use a drive socket #7. Use a ratchet wrench.



23 Detach the coolant hose.



Replacement: engine thermostat – BMW 3 Compact (E46). Tip:

- Be careful! The coolant may leak.

24 Loosen the clamp on the EGR cooler pipe. Use a drive socket #7. Use a ratchet wrench.



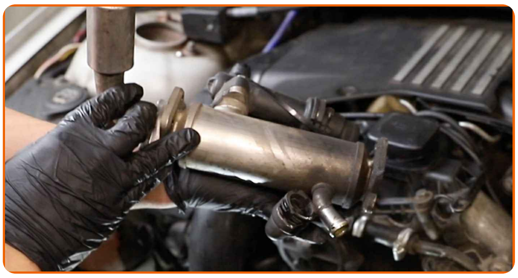
25 Disconnect the EGR cooler pipe.



26 Unscrew the EGR cooler fasteners. Use a combination spanner #13.



27 Remove the EGR cooler.



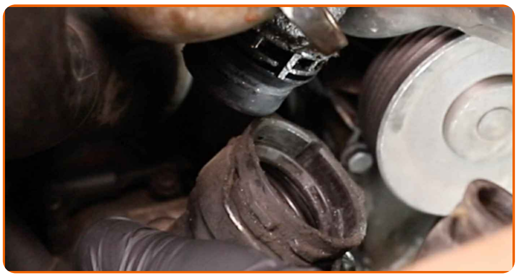
28 Cover the EGR cooler pipe with a microfibre cloth to prevent dust and dirt from entering the system.



29 Disconnect the coolant pipe retaining clip. Use a crowbar.



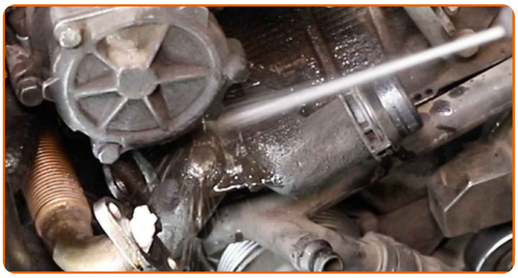
30 Detach the coolant hose.



Replacement: engine thermostat – BMW 3 Compact (E46). Tip from AUTODOC:

- Be careful! The coolant may leak.

31 Clean the thermostat housing fasteners. Use all-purpose cleaning spray.



32 Unscrew the thermostat housing fasteners. Use a drive socket #10. Use a ratchet wrench.



33 Unscrew the EGR cooler bracket. Use a drive socket #13. Use a ratchet wrench.



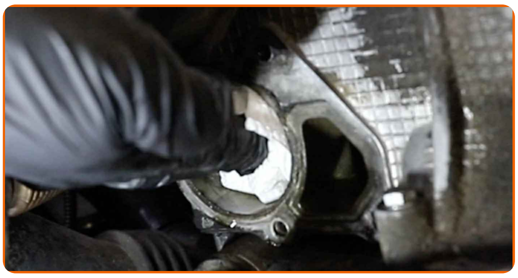
34 Unscrew the thermostat housing fasteners. Use a drive socket #10. Use a ratchet wrench.



35 Remove the thermostat housing.



36 Cover the EGR cooler pipe with a microfibre cloth to prevent dust and dirt from entering the system.



37 Clean the thermostat housing mounting seat. Use a seal scraper. Use all-purpose cleaning spray.



38 Remove the microfibre cloth.



39 Treat the thermostat housing mounting seat. Use a sealant.

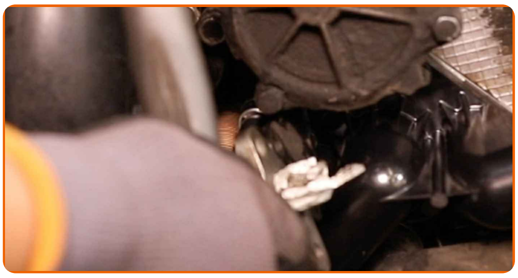
40 Install the new thermostat housing.



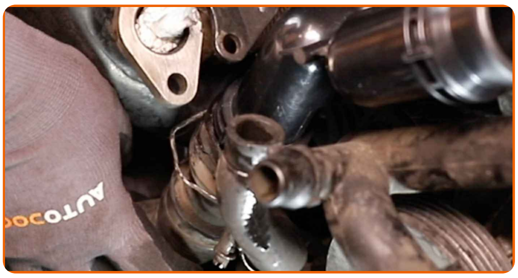
41 Tighten the thermostat housing fasteners. Use a drive socket #10. Use a torque wrench. Tighten it to 9 Nm torque.



42 Tighten the EGR cooler bracket. Use a drive socket #13. Use a torque wrench. Tighten it to 14 Nm torque.



43 Attach the coolant hose.



44 Connect the coolant pipe retaining clip.



45 Remove the microfibre cloth from the EGR cooler pipe.



46 Install the EGR cooler.



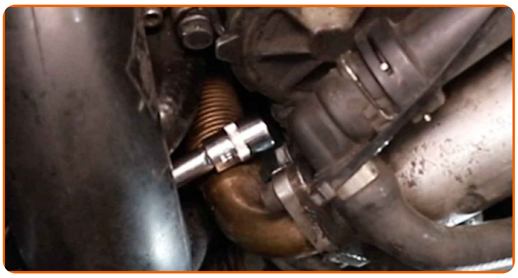
47

Tighten the EGR cooler fasteners. Use HEX No.H5. Use a torque wrench. Tighten it to 6 Nm torque.



48

Tighten the EGR cooler fasteners. Use a drive socket #13. Use a torque wrench. Tighten it to 12 Nm torque.



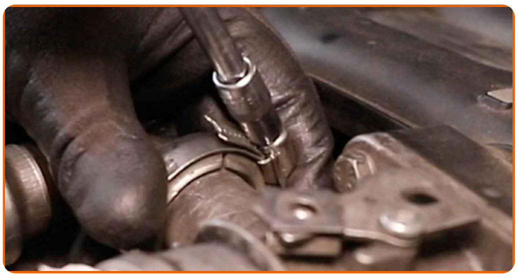
49

Connect the EGR cooler pipe.



50

Tighten the clamp of the EGR cooler pipe. Use a drive socket #7. Use a ratchet wrench.



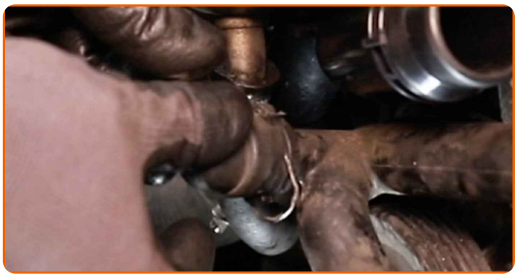
51 Attach the coolant hose.



52 Secure the coolant hose clamp. Use a drive socket #7. Use a ratchet wrench.



53 Attach the coolant hose.



54 Connect the coolant pipe retaining clip.



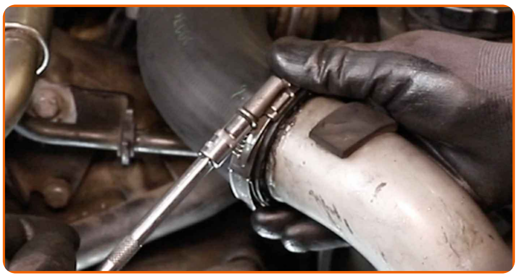
55 Remove the microfibre cloth from the coolant hose.



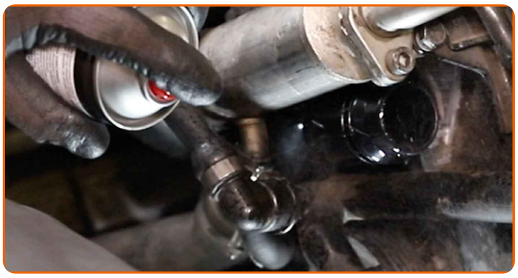
56 Install the air intake hose and secure it.



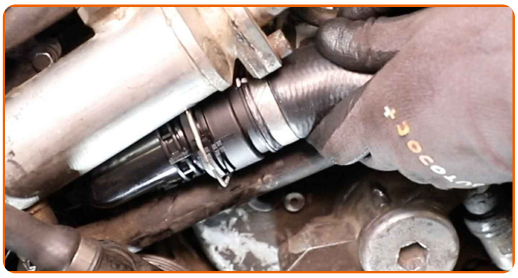
57 Install the fastening clamps of the air filter breather pipe and the air filter inlet pipe. Use a drive socket #7. Use a ratchet wrench.



58 Clean the mounting seats of the coolant hose. Use all-purpose cleaning spray.



59 Attach the coolant hose.



60 Connect the coolant pipe retaining clip.



61 Insert the funnel.



62 Pour coolant in the coolant reservoir.



Replacement: engine thermostat – BMW 3 Compact (E46). AUTODOC experts recommend:

- Only use the coolant recommended by the manufacturer.
- The coolant level should be at the MAX mark.
- Wait until the air goes out of the system.

63 Unscrew the bleeder screws. Use a flat screwdriver.



Please note!

- This is necessary to remove any remaining air from the system.

64 Screw in the bleeder screws. Use a flat screwdriver.



65 Check the coolant level. If necessary, top up to the required level.



66 Screw on the coolant reservoir cap.



67

Install the engine cover and secure it.

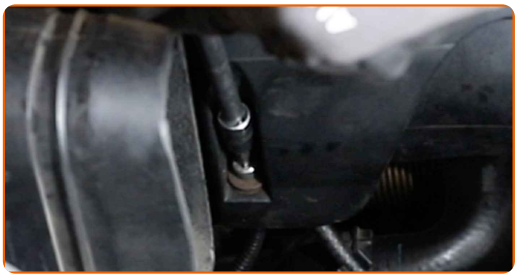


AUTODOC recommends:

- When installing, do not use excessive force to avoid damage to the part.

68

Screw in the engine cover fasteners. Use HEX No.H5. Use a ratchet wrench.



69

Reinstall the air distribution housing assembly.



70

Screw in the fasteners of the air distribution housing assembly. Use a drive socket #12. Use a ratchet wrench.



71 Lower the car.

72 Remove the jacks and chocks.

73 Run the engine for a few minutes. This is necessary in order to make sure that the component operates properly.

74 Shut off the engine.

75 Remove the fender protection cover.

76 Close the hood.

WELL DONE!

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